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PSG/AID-127/70
17 April 1970

MEMORANDUM FOR: Executive Director, NPIC

SUBJECT: Effectiveness of Major Center Computer Applications

In response to your questions of 16 March we have assessed the effectiveness of Center computer applications. I am attaching a "think piece" prepared by [redacted] which provides the rationale underlying our assessment. The following observations summarize our conclusions.

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Applications Which Have Been Successful

We have observed that successful applications usually

1) involve performing arithmetic calculations too cumbersome for manual methods, or

2) involve transaction processing of a clerical nature (e.g., storage and retrieval).

Tasks falling in either category are well defined. We cite four successful major applications which satisfy basic Center requirements:

1) On-Line Photo-Measurement Systems - It should be noted that our hardware was selected to satisfy this requirement.

2) Mensuration Parameters File - The system is sufficiently generalized to accommodate new collection systems with relative ease.

3) RUM/ART Executive System - Capable of serving more than 100 remote terminals, the system allows for concurrent execution of real-time interactive applications, remote batch applications, and background batch applications. It is presently handling nearly 1,000 jobs a day.

4) Target Brief System (future IIS) - The system provides information that the Center must have to operate effectively.

Declass Review by NGA

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GROUP 1
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Two additional applicatons may be termed "qualified successes." One, COINS, is a success on two counts: a) we can operate effectively against all design criteria of the experiment; b) computer networks are a way of the future, and we have gained the experience necessary to be a part of that future. The other, SHAPE, has not yet completed acceptance tests but we are confident that it will. The SHAPE system performs the mountain of calculations required to make precise measurements of objects appearing on ground photography (e.g., new missiles in a Moscow parade), and is thus a valuable adjunct to the On-line Photo-measurement System.

Applications Which Have Been Unsuccessful

We have observed that our unsuccessful applications have design aspects which

1) are cumbersome in terms of computer and peripheral utilization and ease of use, and

2) are not sufficiently generalized, and thus lack the flexibility to accommodate changes in customer requirements without substantial reprogramming.

We place three major applications in this category:

1) Management Information System - In addition to the design faults cited above, this system suffers from ineffective management control over the content of the MIS data file. We are working with PPBS to correct the system's deficiencies.

2) Exploitation Products Data File - The customers' requirements for information from this file are presently being met by a "kludge" of computer, EAM, and manual means. The design and programming of a new system to meet EPDF requirements will be given top priority once the IIS is installed.

3) World-wide Immediate Photo Interpretation Report (WWIPIR) System - This system, which was installed last October and permits the preparation of first-phase reports from remote terminals in IEG, requires inordinate amounts of core and drum storage. In addition, the system design prevents incorporation of the system in the IIS. We intend to resolve the latter problem by IIS implementation, and then devote attention to a generalized reporting system.

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Major New Applications in the Foreseeable Future

We can think of only one application that falls into this category: development of a free-text search capability. Within the context of the Center's Mission and Functions, the big payoff from ADP has already been attained (the Photo-Measurement System and the Target Brief System). There will, of course, be significant extensions to existing "successful" systems and substantial upgradings to existing "unsuccessful" systems. Indeed, development of a free-text search capability can be considered merely an extension of our information storage and retrieval systems; however, the complexities of free-text search will necessitate a large investment of AID resources and thus warrants singling out.

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[redacted]

Chief, Automated Information Division, PSG

Attachment:
As Stated

Distribution:
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Copies also sent to:
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